

I claim:

- 1        1. A method for forming a structure element in a layer arranged on a wafer by a first  
2 mask and a second trimming mask assigned to the first mask, comprising:  
  
3                providing the wafer with the layer, the first mask, and the second trimming  
4 mask;  
  
5                applying a first photosensitive resist layer to the layer;  
  
6                projecting a first mask structure pattern arranged on the first mask into the  
7 first resist layer to form an exposed resist structure, the exposed resist structure at  
8 least partly surrounding an unexposed resist element;  
  
9                developing the first resist layer;  
  
10              etching the layer with a transfer of the exposed resist structure into the layer, thereby  
11 forming an elevated structure element in the layer below the unexposed resist element;  
  
12              removing the first resist layer;  
  
13              applying a second photosensitive resist layer to the layer;  
  
14              projecting a second mask structure pattern arranged on the second  
15 trimming mask into the second resist layer to form a second exposed resist  
16 structure in the second resist layer, the second exposed resist structure at least  
17 partly covering the elevated structure element in the layer;  
  
18              developing the second resist layer; and  
  
19              etching the layer with a transfer of the second exposed resist structure into the layer  
20 and the elevated structure element.
  
  
- 1        2. The method as claimed in claim 1, wherein projecting the first mask

2       structure pattern arranged on the first mask is carried out using an alternating or a chromeless  
3       phase mask.

1           3.   The method as claimed in claim 1, wherein projecting the first mask structure  
2       pattern arranged on the first mask is carried out using a chrome or halftone phase mask with  
3       oblique exposure.

1           4.   The method as claimed in claim 1, wherein the elevated structure element is  
2       formed in the layer, the elevated structure element including an electrically conductive  
3       material.

1           5.   The method as claimed in claim 1, wherein projecting the first mask structure  
2       pattern arranged on the first mask forms a plurality of elevated metal interconnects, the metal  
3       interconnects being arranged substantially parallel.

1           6.   The method as claimed in claim 5, wherein, in etching of the layer with a transfer  
2       of the second exposed resist structure into the layer, at least one of the elevated metal  
3       interconnects is separated into at least two structure elements.

1           7.   The method as claimed in claim 1, wherein projecting the first mask structure  
2       pattern arranged on the first mask forms the elevated structure element in a partial region by a  
3       phase jump and sets up on the first mask between two adjoining transparent regions on the  
4       first mask, and etching of the layer with a transfer of the second exposed resist structure into  
5       the layer removes the partial region.

1           8. The method as claimed in claim 1, wherein, between removing the first resist  
2 layer and applying the second photosensitive resist layer, an intermediate layer is deposited  
3 and patterned lithographically.

1           9. The method as claimed in claim 8, wherein an electrically insulating material is  
2 used as material of the intermediate layer.

1           10. The method as claimed in claim 8, wherein, in the lithographic patterning of the  
2 intermediate layer, the elevated structure element is uncovered below the intermediate layer  
3 by removal of a part of the intermediate layer.

1           11. The method as claimed in claim 10, wherein, in projecting the second mask  
2 structure pattern arranged on the second trimming mask into the second resist layer, a third  
3 exposed resist structure is exposed in the second resist layer, the third exposed resist structure  
4 covering a region above the intermediate layer which has not been previously removed  
5 during the lithographic patterning.

1           12. The method as claimed in claim 11, wherein the third exposed resist structure for  
2 forming a contact hole, is transferred into the intermediate layer, the contact hole being filled  
3 with an electrically conductive material in a further step.

1           13. The method as claimed in claim 2, wherein projecting the first mask structure  
2       pattern arranged on the first mask forms a plurality of elevated metal interconnects, the metal  
3       interconnects being arranged substantially parallel.

1           14. The method as claimed in claim 3, wherein projecting the first mask structure  
2       pattern arranged on the first mask forms a plurality of elevated metal interconnects, the metal  
3       interconnects being arranged substantially parallel.

1           15. The method as claimed in claim 13, wherein, in etching of the layer with a  
2       transfer of the second exposed resist structure into the layer, at least one of the elevated metal  
3       interconnects is separated into at least two structure elements.

1           16. The method as claimed in claim 14, wherein, in etching of the layer with a  
2       transfer of the second exposed resist structure into the layer, at least one of the elevated metal  
3       interconnects is separated into at least two structure elements.